Duke Power
A Duke Energy Company

D.M. JAMIL
Vice President

Duke Power
Catawba Nuclear Station
4800 Concord Rd. / CN01VP
York, SC 29745-9635

803 831 4251
803 831 3221 fax

December 16, 2004

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
11555 Rockville Pike
Rockville, Maryland 20852

Subject: Catawba Nuclear Station, Unit 2
Docket No. 50 -414
Response to NRC Bulletin 2003-02: Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity

Pursuant to 10 CFR 50.54(f), this letter and the associated Enclosure provides Duke Energy Corporation's (Duke's) response to specific items of NRC Bulletin 2003-02 for Catawba Nuclear Station. This bulletin requested plant-specific information as a result of NRC staff concerns regarding reactor pressure vessel lower head penetration leakage and reactor coolant pressure boundary integrity.

Information is provided for Bulletin item 2. This response provides information concerning the inspection results of the reactor pressure vessel lower head penetrations.

This letter and enclosure do not contain any commitments.

If you have questions or need additional information, please contact Gregory S. Kent at (980) 373-6032.

Very truly yours,

D. M. Jamil

ENCLOSURES

A109

D. M. Jamil affirms that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth herein are true and correct to the best of his knowledge.

Vice President
Catawba Nuclear Station

Subscribed and sworn to me: DECEMBER 16TH, 2004
Date

Notary Public

My Commission Expires: 10/1/2014
Date

SEAL

xc: W.D. Travers
U.S. Nuclear Regulatory Commission Regional Administrator
Region II Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85

S. E. Peters
NRC Project Manager (CNS)
U.S. Nuclear Regulatory Commission
Mail Stop O-8 G9
Washington, DC 20555-0001

E. F. Guthrie
Senior Resident Inspector (CNS)
CN01NC

ENCLOSURE I
Catawba Nuclear Station
Response to NRC Bulletin 2003-02

Requested Information

(2)

Within 60 days of plant restart following the next inspection of the RPV lower head penetrations, the subject PWR addressees should submit to the NRC a summary of the inspections performed, the extent of the inspections, the methods used, a description of the as-found condition of the lower head, any findings of relevant indications of through-wall leakage, and a summary of the disposition of any findings of boric acid deposits and any corrective actions taken as a result of indications found.

Response:

During the most recent Unit 2 refueling outage, bare metal visual and volumetric inspections were performed on the lower head bottom mounted instrument (BMI) penetrations. On September 13, 2004, Duke conducted a bare metal visual inspection of the exterior surface of the Catawba Unit 2 reactor vessel lower head, including 360 degrees around 100 percent of the BMI penetrations. Duke conducted this inspection using digital cameras and direct visual observation.

The inspection showed the presence of boron trails and superficial rust and scaling on the bottom of the reactor vessel. The boron trails intersected the BMI penetrations from a source on the vessel sides, and were attributed to past cavity seal leakage. The inspectors observed no boron or other deposits indicative of BMI penetration or through-wall leakage. The inspection detected no wastage attributed to borated water leakage on the exterior reactor vessel low alloy steel surface. Analysis of smears and samples taken from deposits and rust areas indicated an origin other than a reactor coolant system leak. Analytical methods included isotopic analysis of smears and Energy Dispersive Spectroscopy or Inductively Coupled Plasma analysis when sufficient quantities of samples were available.

The bare metal surface of the reactor vessel was cleaned and re-inspected to establish a baseline for future inspections.

In addition, Duke conducted inspections from the interior of the reactor vessel in conjunction with the 10 year RV ISI work. A volumetric ultrasonic examination of the nozzle base material two inches above and below the J-groove weld was completed from the ID surface. Also surface eddy current inspections were completed on the inner surface of 56 of 58 BMI nozzles. Equipment delivery (robot) malfunctions prevented

inspection of the remaining two (2) nozzles. From the inside of the reactor vessel, Duke conducted visual inspection of the 58 BMI nozzles and attachment J-groove welds. The inspections identified no indications.

The Catawba Unit 2 refueling outage concluded October 24, 2004 when the unit was placed on line.